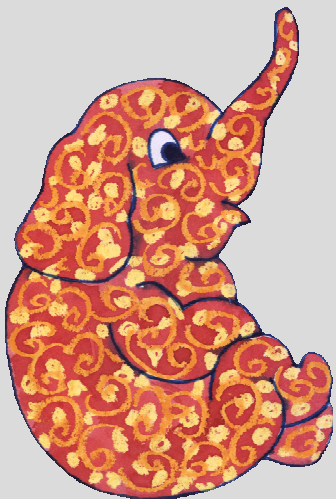




WP5 Storage Element

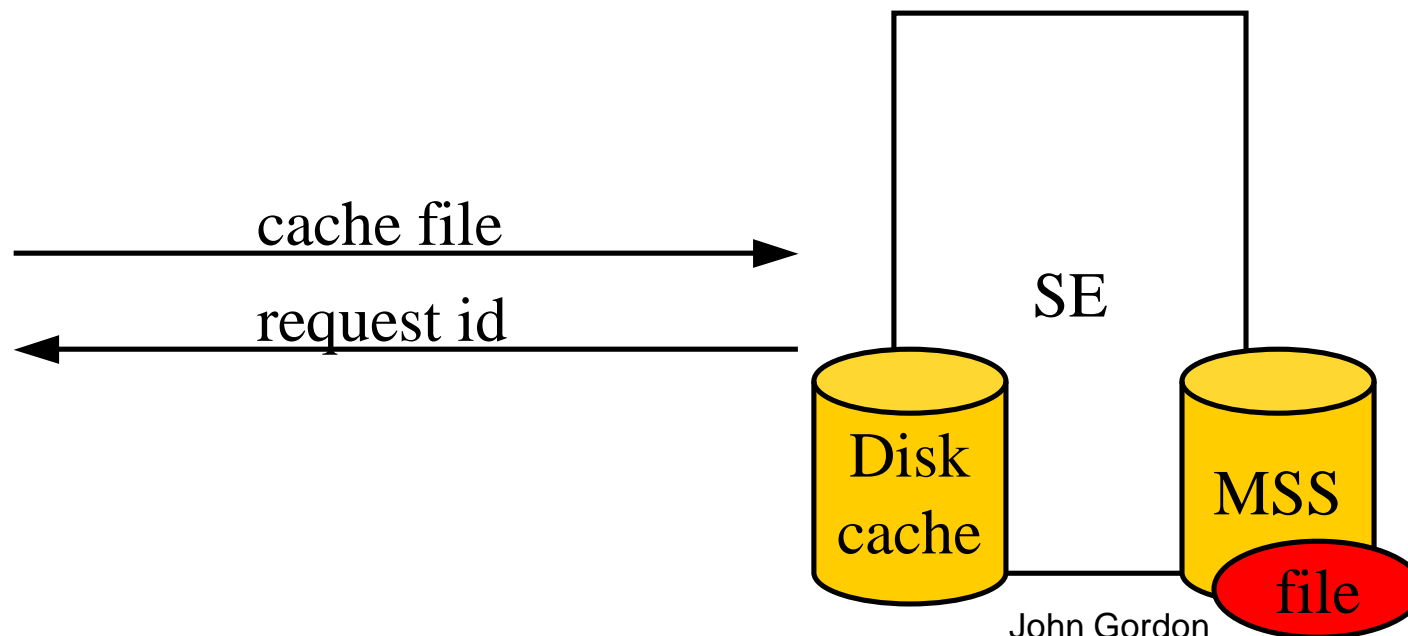
DataGrid Project Conference
Heidelberg, 26 Sep-01 Oct 2003



Jens G Jensen
RAL, EDG WP5

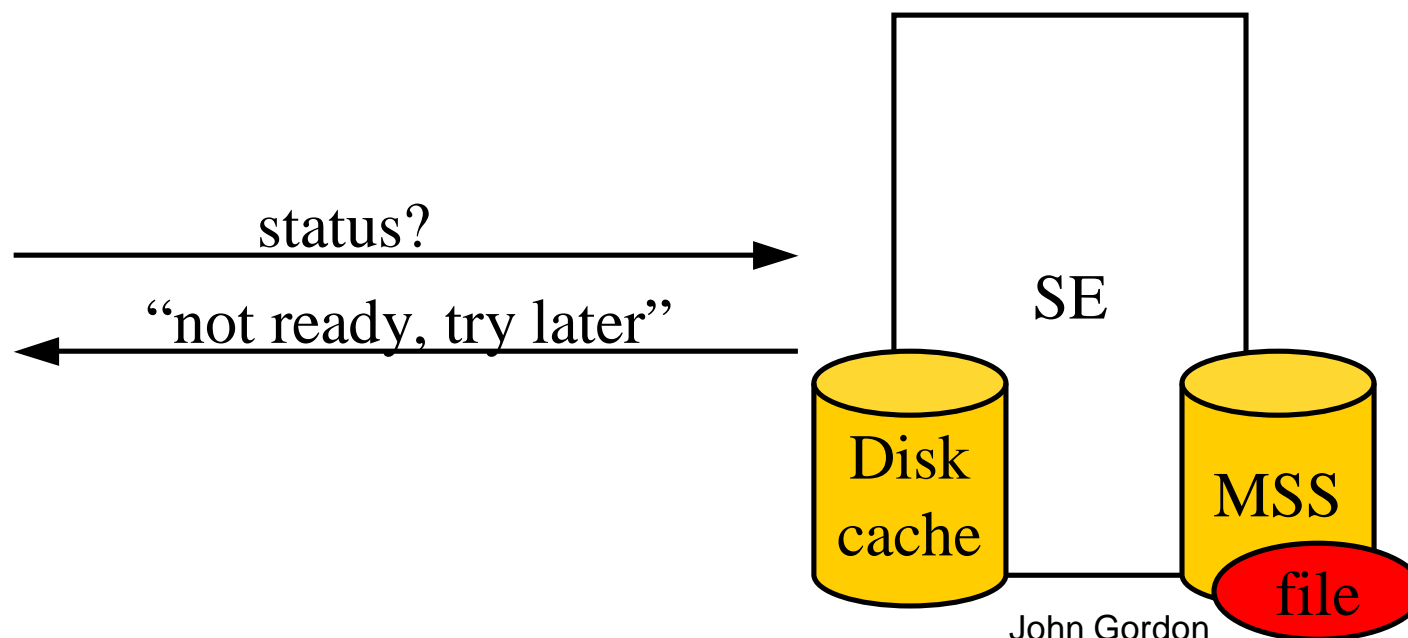
- WP5 mission was to provide a common API to Mass Storage
- People ask why it is so complicated
- ... because we **provided a common API to Mass Storage**
- And because we followed the **SRM interface**

- Users know Site File Names (SFN) or Physical File Names (PFN)
- `lxshare0408.cern.ch/bongo/mumble`



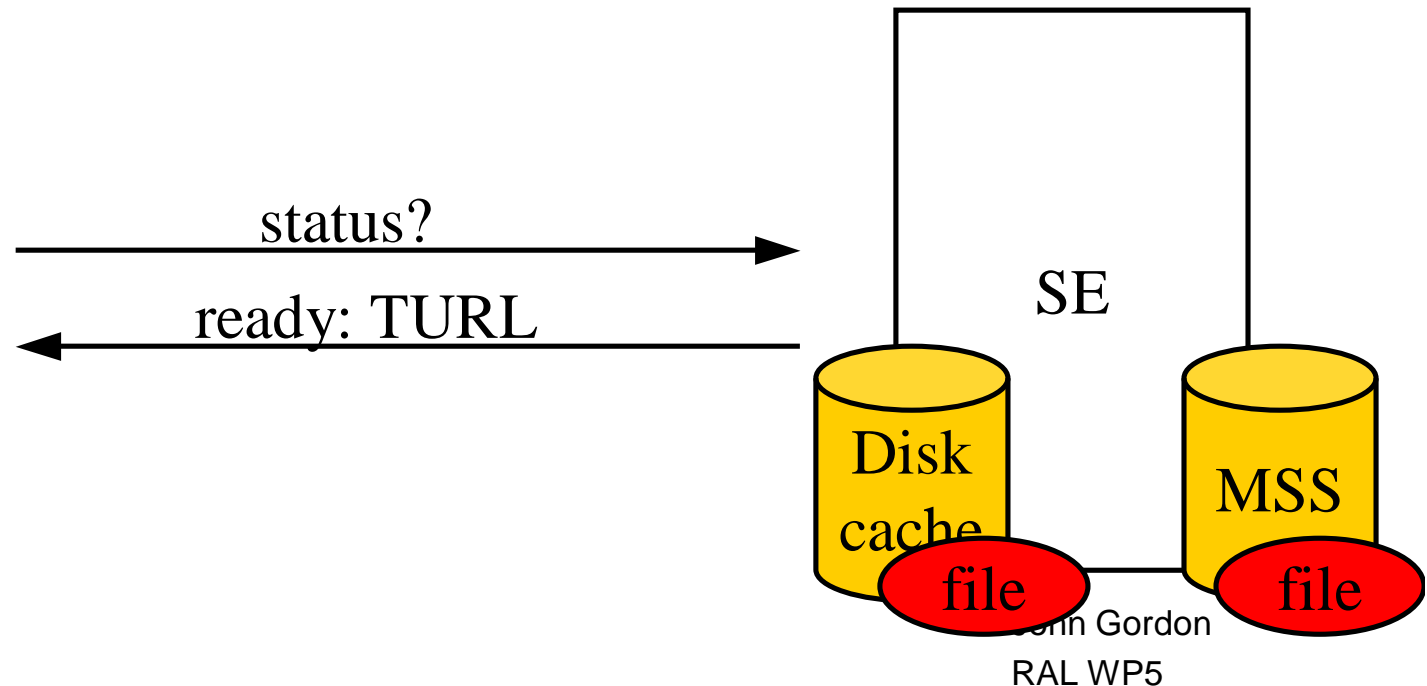
John Gordon
RAL WP5

- Client queries the status of a request
- Better that client polls than server callbacks
- Server (ideally) able to give time estimate

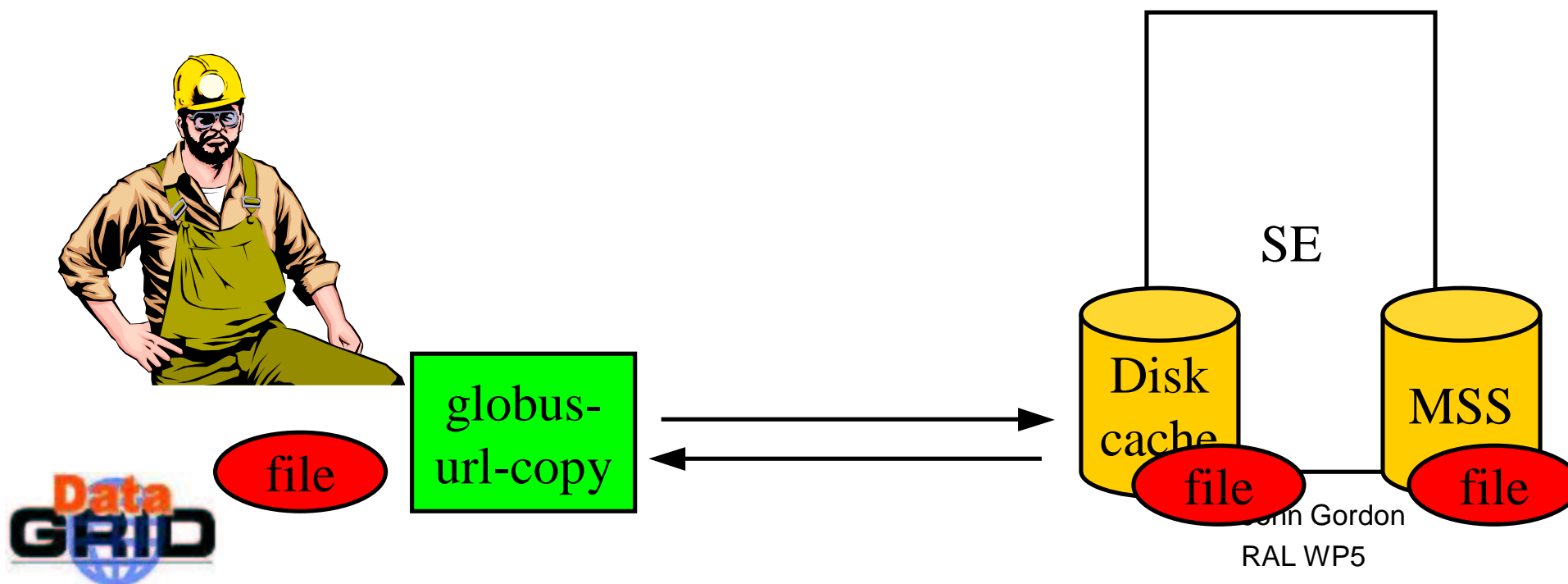


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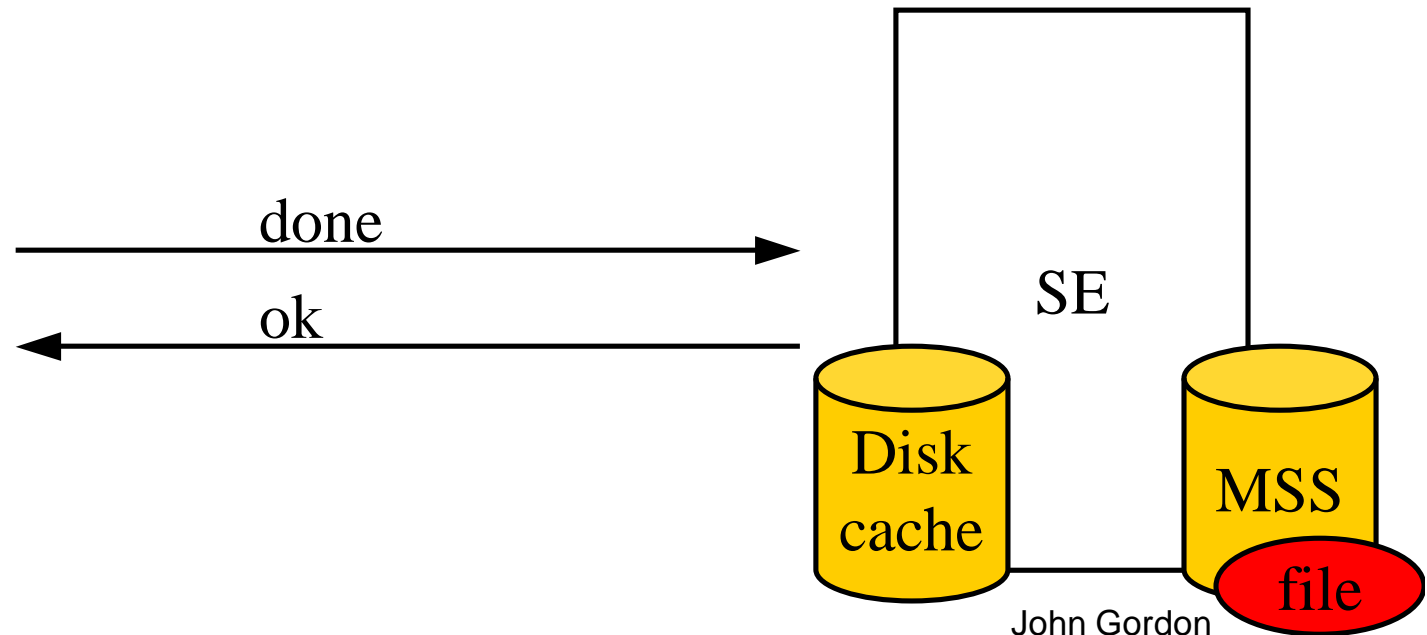
- When request is ready, client gets a Transfer URL (TURL)
- `gsiftp://lxshare0408.cern.ch/flatfiles/01/data/16bd30e2a899b7321baf00146acbe953`



- Client accesses the file in the SE's disk cache using (usually) non-SE tools



- Finally, client informs SE that data transfer is done
- This is required for cache management etc



- SE Control System delivered as webservice
- Provides common (blocking) interface to all SEs
 - Disk and several MSS
- Publishes GLUE Storage Schema to Information Service (RGMA)
- MSS supported
 - Castor, HPSS, ADS, disk
- Protocols supported
 - Gridftp, file, rfio
- Each VO has its own name space
 - WP9 use case

- Tested in application testbed
 - Barcelona(Castor), NIKHEF, Imperial, RAL-Tier1(ADS), RAL-PP, Karlsruhe, CC-IN2P3 Lyon
- Tested in 2.0 dev testbed but not yet integrated in app testbed
 - CERN (Castor), CC-IN2P3 (HPSS)
- Under development but not in TB2.1
 - ESRIN – AMS
 - SARA – SGI
 - INSA - Dicom

- SE returns Transfer URL (TURL) for requested protocol
- **GridFTP**(gsiftp) can be used for data transfer to remote SE
 - File transferred using globus-url-copy
- FILE protocol provides access to disk on ‘local’ SE from WN when WSE filesystems nfs-mounted on WN
 - TURL= file://pathname
- rfiod runs on all Ses and clients on WNs
 - TURL= rfio://host/path (not hostname:/pathname)

- Other applications didn't want to migrate data from TB1
- WP9 had 11,000 files distributed round TB1.4
 - Use as a migration test case without physically moving files
- WP2 tool migrates TB1 Replica Catalogue to RLS
 - And checks existence of files.
- WP5 tool run by sysadmins at each site to register files in TB2.0 SE
- Plan extended due to sysadmins wanting to move files from TB1.4 locations
- Migration still running last night

- Bug fixes
 - Delete
 - More efficient ls to speed up edg-rm registration
- Secure mode SE
 - User identified by DN
 - VO taken from gridmapfile
 - cf insecure mode where all files owned by a site-defined user (*default John Gordon*)

Developments completed but not released in TB2.1

- ACL
 - Using GACL
- SRM1.1 for GFAL
 - Implemented subset of SRMv1.1 used by GFAL spec
 - Grid File Access Library being developed by CERN for LCG
 - Implemented as adaptor class on TB2 SE

- Asynchronous (non-blocking) SE
 - Full SRM v1.1
 - As separate direct webservice
- VOMS support
 - Groups, roles, etc
 - Already supported by GACL
 - Use edg-authorisation-manager to parse VOMS credentials
- Disk Cache Management

- Sell to LCG
 - For SRM and VOMS access to MSS
- Guaranteed reservations
 - SRM2 recommendations: volatile, durable, permanent *files* and *space*
- Full SRM version 2.1
- Scalability
 - Scalability will be improved by making a single SE distributed

- I am retiring as WP Manager
- Being replaced by Jens Jensen
- So long and thanks for all the fish!



John Gordon
RAL WP5